

McCAD™ Gerber View/Translator

Converts Gerber Database to McCAD™ Printed Circuit Design Database

Eliminates costly re-entry of existing files and allows the conversion of mini or mainframe generated designs to the McCAD™ Design format for rapid editing and revision.

McCAD™ Gerber View/Translator offers the user tremendous flexibility in manipulating previously generated Gerber format plot files - a common language bridge to the output from other CAD systems.

System Benefits:

1) Allows the viewing of existing plot files before plotting. Plot files can be quickly scanned before consuming costly plotter time.

2) Allows the conversion of digitized tape designs to McCAD™ format.

3) Allows the designer to rapidly edit or revise existing files without going back to a mainframe CAD system. Most design revisions can be performed on the more cost efficient Macintosh using McCAD™ Printed

D10			D18			D24		
D11	10	10	D19	50	50	D25	0	0
D12	12	12	D70	50	50	D26	0	0
D13	0	0	D71	50	50	D27	0	0
D14	0	0	D20	50	50	D28	0	0
D15	50	50	D21	0	0	D29	0	0
D16	0	0	D22	0	0	D72	0	0
D17	0	0	D23	0	0	D73	0	0

☒ Round / Oval
☐ Square / Rectangle
☐ Donut
☐ Thermal Relief
☐ Target

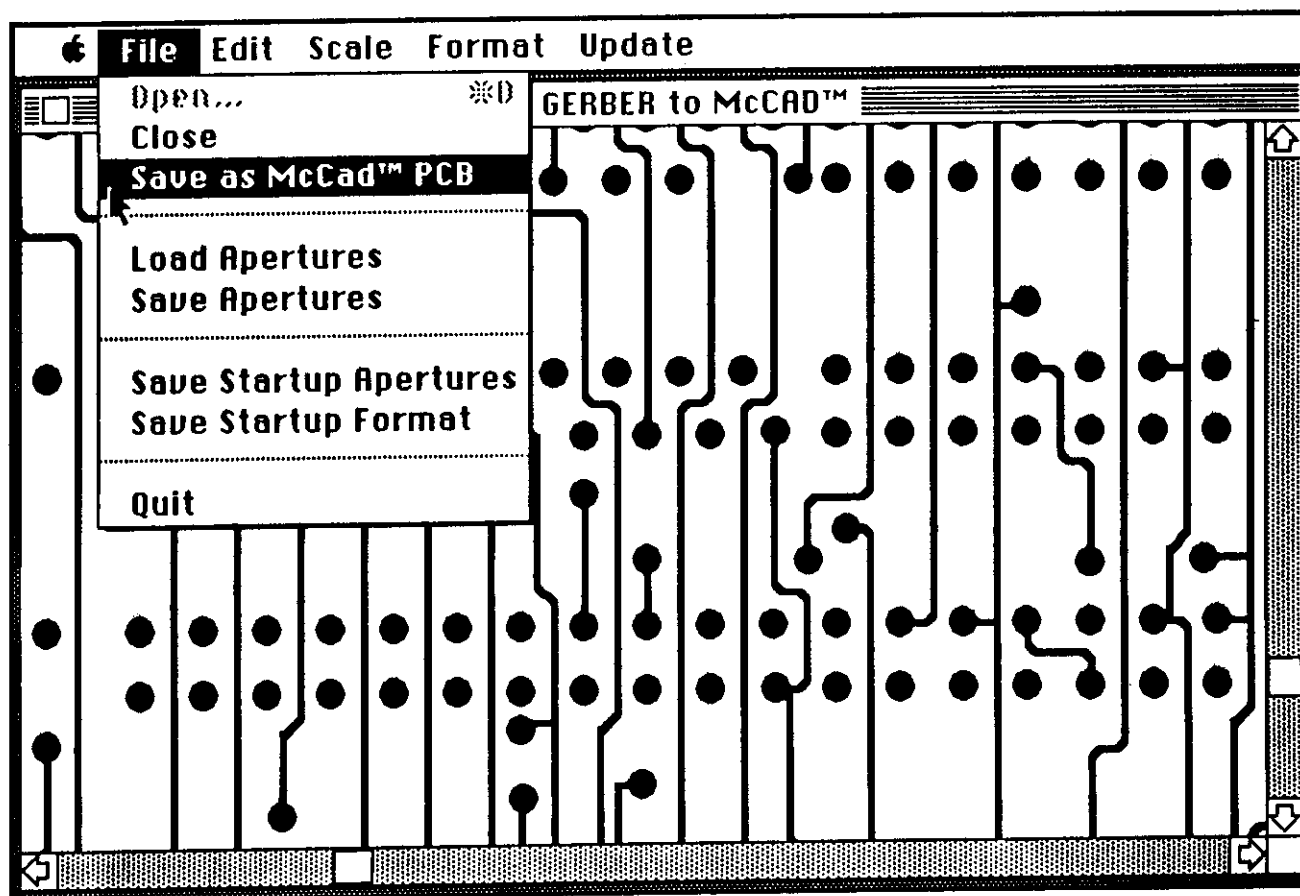
H Y H Y
O.D. I.D. O.D. I.D.

OK Cancel

Circuit Design software, saving time and freeing up your mainframe CAD system.

4) Offers a method of resurrecting old designs from outdated or non-functional CAD systems.

McCAD™ Gerber View/Translator allows the user to save the D-code conversion tables required for similar files. Line thickness and pad outside diameter and geometry can also be manipulated through the D-code conversion table.



McCAD™ to Gerber Translator

Converts McCAD™ Printed Circuit Design Database to Gerber Database for Photoplotting

Photoplotting offers a number of distinct advantages in the generation of artwork for the production of printed circuit boards. Since no intermediate step of creating artwork and then reducing it to a negative is required, turn-around can be much faster. The direct photo method also provides a level of accuracy difficult to achieve with other output means, particularly with multilayer printed circuit board designs.

The capabilities of McCAD™ design software, in many cases, exceeds the capabilities of conventional photo plotters. To overcome this bottleneck, McCAD™ to Gerber Translator provides the user with a choice of two output conversion methods:

Single Aperture (similar to a pen plotter) will result in a faithful reproduction of the design from the data base. While the most accurate results are obtained with this output, this method of plotting is very time consuming and generates extremely large ASCII data files (possibly several mega-bytes on large designs).

Multiple Aperture mode is a far more efficient method of conversion. Here an element is created with a single exposure as opposed to being drawn. As a result, ASCII files are

much smaller and drawing time is greatly reduced. This mode normally limits you to a maximum of 24 different apertures.

McCAD™ to Gerber Translator overcomes this aperture limitation with a number of built-in utility features to efficiently generate the required Gerber plotting commands while in the Multiple Aperture mode. McCAD™ to Gerber Translator automatically extracts an aperture table from the file to be converted,

eliminating errors in aperture tool setup. This mode defaults to Single Aperture mode for any portions of the plot that cannot use the Multiple Aperture mode.

Time Saving Features

Features include automatic pre-sort and loading of Gerber Tool D-codes based on either a particular layer or all layers combined. Up to 800 different Gerber Tool Tables can be stored for later use or reference. Gerber data can be output directly via the printer port or saved to disk for later use. The software also provides automatic segmentation of Gerber data files when a diskette becomes full and also provides automatic labeling of generated Gerber data files.

Layers Used In Sorting & Loading Gerber Tool ID 200

McCAD PCB to GERBER Translator

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Silk Screen | <input type="checkbox"/> Inner Foil 1 |
| <input type="checkbox"/> Pads Master | <input type="checkbox"/> Inner Foil 2 |
| <input type="checkbox"/> Top Foil | <input type="checkbox"/> Bottom Foil |
| <input checked="" type="checkbox"/> Sort From All Layers | |

Sort will automatically pre-load Gerber tool with most frequently used elements starting with Tool Code D11. If tool becomes full remaining elements are plotted using the default code D10 which should be a 0.010" round.

OK

Gerber Photo Plotter Set-up Options		
CONVERSION METHOD		OK
<input checked="" type="checkbox"/> Multiple Aperture Conversion		Cancel
<input type="checkbox"/> Single Aperture Conversion		
ARTWORK OPTIONS		OUTPUT RATIO
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N Fill Pad Centers		<input checked="" type="checkbox"/> 1 X
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N Mirror Horz. Vectors		<input type="checkbox"/> 2 X
FILM SIZE	APERT. Dia.	BAUD RATE
<input type="checkbox"/> 8.5" x 11"	<input type="checkbox"/> 0.007"	<input type="checkbox"/> 1200
<input type="checkbox"/> 11" x 17"	<input checked="" type="checkbox"/> 0.010"	<input type="checkbox"/> 2400
<input checked="" type="checkbox"/> 17" x 22"	<input type="checkbox"/> 0.012"	<input checked="" type="checkbox"/> 9600
	<input type="checkbox"/> 0.015"	<input type="checkbox"/> 19.2K

Gerber Aperture Table			
D-Code	Size	Style	Style Codes
D 10	10	0	0- Round
D 11	15	0	1- H Oval
D 12	20	0	2- V Oval
D 13	30	0	3- Square
D 14	50	0	4- H Rect
D 15	80	0	5- V Rect
D 16	50	5	<input checked="" type="checkbox"/> 1st Table
D 17	50	4	<input type="checkbox"/> 2nd Table
			<input type="checkbox"/> 3rd Table
Current Tool ID # 200			OK
SAVE UNDER TOOL ID #			CANCEL
GET TOOL ID #			

For further information, contact Vamp, Inc., 6753 Selma Avenue, Los Angeles, Ca. 90028
Phone (213) 466-5533

SPECIFICATIONS:

SYSTEM CONSOLE:	Macintosh 512K, Mac Plus, 1 or 2 Meg Upgrades
MEASUREMENT UNITS:	Switchable between Metric & Standard
LAYOUT AREA:	30" x 30" (76.2 x 76.2 cm)
NUMBER OF LAYERS:	6 - viewable in simultaneous registration
LAYER VIEWING:	All or selected combinations
NUMBER OF COLORS ON SCREEN:	3 - Black, white, halftone patterns (3)
DISPLAY SCREEN RESOLUTION:	512 x 342 (Mac)
DISPLAY SCALING (ZOOM):	20% to 1000%
NUMBER OF PAD SIZES:	18 of each shape
PAD SHAPES:	Square, round, rectangular (2), oval (2)
VARIABLE PATTERN SHAPES:	Filled: Rectangular, Circular
DUAL IN-LINE PATTERNS:	8, 10, 14, 16, 20, 22, 24, 28, 36, 40 pin or any resulting combination. Choice of .3, .4, .6, .9 spacing. Choice of pad shape.
DB CONNECTORS:	9, 15, 25, 37, pin patterns
SMT PATTERNS:	S.O. DIP, Chip Carrier Packs, Flat Packs
PATTERN ARRAY GENERATORS:	For multiple pad array, multiple line array, or ground plane creation
NUMBER OF TRACE SIZES:	18 - (0.007 to 0.5 inches), plus any combination
NUMBER OF DRILLING SIZES:	19 - From 0.028 to 0.5 inches & Metric equivalents
SILKSCREEN:	Rectangular & Circular pattern generator. Choice of Text fonts. Choice of Text sizes (7pt to 18pt).
CUSTOM TEMPLATE LIBRARY	Stores user created artwork masters
DATABASE RESOLUTION:	.001 inches (0.0254mm)
BUILT-IN GRIDS:	Standard: .010, .020, .025, .050, .1, .125, .150, .156 Metric: 1 & 2 mm
AUTO-GRID:	Placement of art to nearest grid line
ART PLACEMENT INTERVAL:	.001 inches (0.0254mm) - Auto-Grid off
TRACKING RULER:	Division set by grid spacing
LOCATOR:	True data position in thousandths, or tenths of millimeter
OUTPUT DOCUMENTS:	Trace layers (4), Silk screen, Pad Master, Solder Mask, Drill Template, Drill List, Checkprints
OUTPUT INTERFACE:	Serial EIA RS-232C
OUTPUT DEVICES:	Imagewriter, Apple Laserwriter, Pen Plotter, Gerber type Photoplotter (Optional)
OUTPUT SCALE:	1:1, 2:1, 3:1, 4:1 (Imagewriter requires photo reduction)
PEN PLOTTERS SUPPORTED:	Houston DMP (40, 41/42, 51/52, 56), Hewlett Packard (7470, 7475A, 7550, 7580, 7585, 7586) & compatibles
INPUT DEVICES SUPPORTED:	Mouse, Graphics tablet, Keyboard

Specifications subject to change without notice.

Ordering Information:

A single machine license for **McCAD Metric/SMT/PCB** is available from **VAMP Inc.** The complete package includes a Program disk, a Back-Up copy disk, and a users manual, all of which are packaged in a handsome book binder.

VAMP will pay the shipping for orders accompanied by a certified check, money order, or personal check to destinations within the USA. Allow three weeks for processing of personal check. California Residents must add 6% sales tax plus 1/2% Los Angeles County tax, if applicable.

Purchase Orders will be accepted from companies with approved credit.
Master Card and VISA card orders will be accepted upon verification.

For orders outside of the USA we require that the order be prepaid by check or money order in U.S. dollars. If a charge card is used, hard copy verification is required. Orders will be sent freight collect unless specified otherwise.

Send Orders for Part No. SMT-1 to:

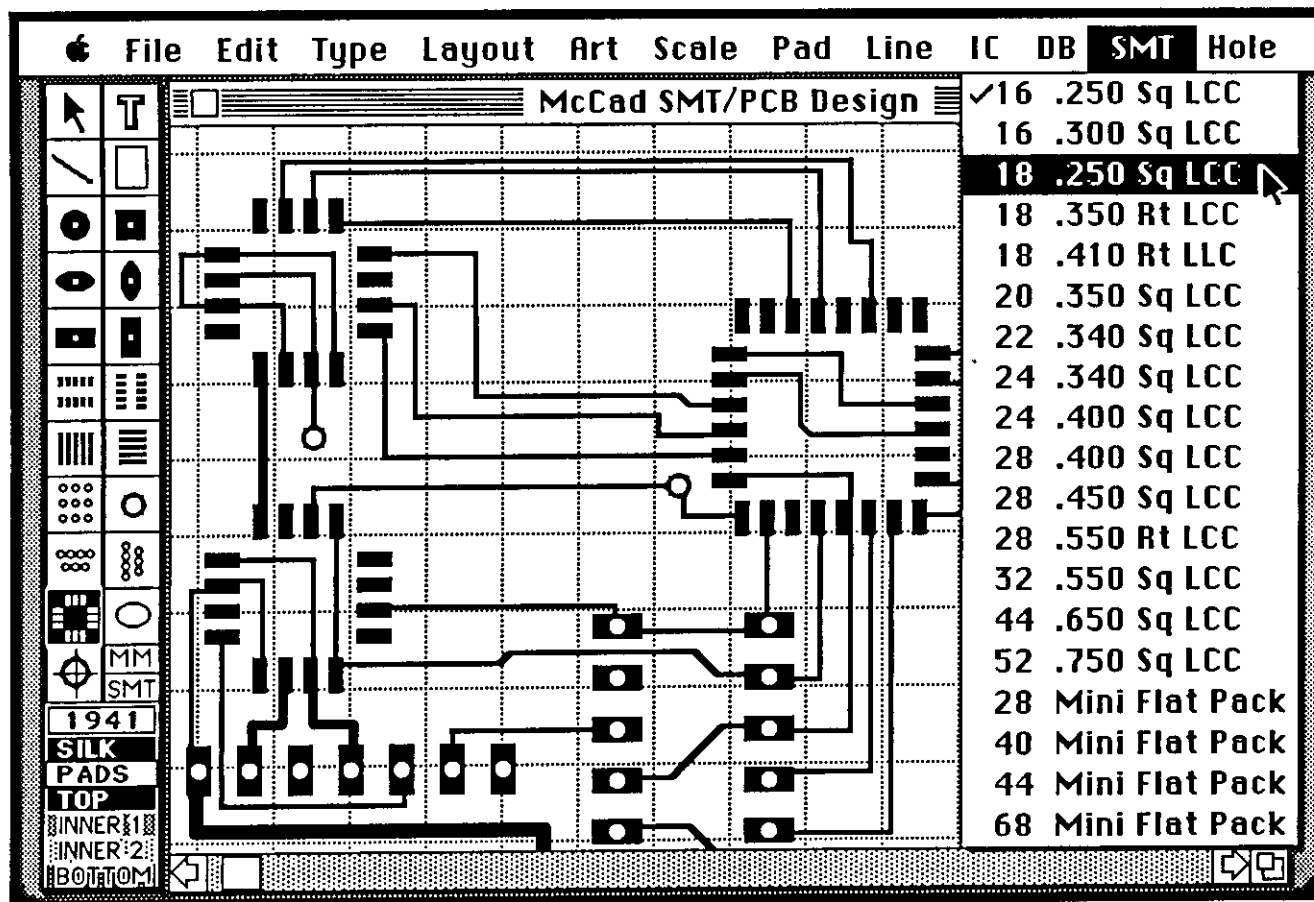
VAMP Inc.
P.O. Box 411, Los Angeles, CA 90028
Phone: 213-466-5533

Telex: 650-262-3069 Answer Back: 650-262-3069-MCI

Pen plotters and cables are available through VAMP. Call or write for details.

Macintosh is a trademark licensed to Apple Computer. McCAD is a trademark of VAMP Inc.

McCAD™ SMT/PCB



Surface Mount Technology, Hybrid, & Traditional Printed Circuit Board Designs.

McCAD™ SMT/PCB

(Surface Mount Technology/Printed Circuit Board) is a low cost, high performance software tool for designing, creating, editing and revising printed circuit board artwork.

FAST AND EASY TO USE

McCAD™ makes the designer's job easy with features such as: selectable auto-grids; centered zoom; a precision x-y locator; and selectable trace widths. And of course, the easy to use Macintosh pull down menus, make the most complex task seem simple.

MINIMAL LEARNING CURVE

The McCAD™ SMT/PCB System is designed for ease of use and requires a minimal learning curve. Average time required to become proficient is less than 20 minutes, with many users proficient in less time.

VERSATILE WORK SURFACE

Six data planes are supported on a 30" by 30" work surface permitting large multiple layer board applications. The system generates a Silkscreen, Padmaster, Four Trace Layers, Drill Template, Drill Listing and a Composite Checkprint. The user has the option of viewing any individual layer or combination of layers, in simultaneous registration.

EXTENSIVE ARTWORK LIBRARY

The system includes a library of *over 2000 standard art elements* including "surface mount technology" patterns. The designer can select pad size, style, drill size and spacing.

SMT EXTRA FEATURES

McCAD™ SMT/PCB includes extra features, such as selectable metric or english measurement units.

For custom art elements and ground planes, the SMT package includes both circular and rectilinear generators with autofill. When in the SMT mode (version 2.0), the software will generate a silk layer, padmaster, tracelayer and soldermask for *both* sides of the printed circuit board.

VERSATILE OUTPUT

Output drivers include, Hewlett-Packard and Houston Instrument plotters, Laserwriter, Imagewriter and a wide variety of other devices. User definable output parameters include: selectable pen size, selectable pen speed, selectable baud rate, selectable output ports. Drawings can be positioned on the output medium. The McCAD SMT/PCB database, accurate to 0.001" can also be plotted via optional software on Gerber-type photoplotters.

THE COST EFFECTIVE SOLUTION

With McCAD™ SMT/PCB soft-ware, the electronics designer's productivity can be increased from the comfort of his own desk ---without a major capital investment.

SPECIFICATIONS:

SYSTEM CONSOLE:	Macintosh 512K, Mac Plus, 1 or 2 Meg upgrades.
LAYOUT AREA:	22" X 34" (D Size)
MEDIA:	Standard size A thru D size drawings.
NUMBER OF PAGES:	Up to 4 D Size pages per desk top.
DISPLAY SCREEN RESOLUTION:	Standard Macintosh or Large Screen Enhancement
DISPLAY SCALING (ZOOM):	10% to 1000%
BUILT-IN GRIDS:	0.125 , 0.250, 0.500, 1.0 inch
AUTO-GRID:	Placement of art to nearest grid
INTERCONNECT ROUTER:	Automatically connects designated nodes.
LIBRARIES:	Basic libraries: CMOS, TTL, Linear, Discrete & Microprocessor. (Extended libraries optional)
LIBRARY EDITOR:	Allows user to create customized elements and symbols which can be added to the system libraries.
OUTPUT DOCUMENTS:	Schematic Drawings, Net List, Wire List and Parts List.
OUTPUT INTERFACE:	Serial EIA RS-232C.
OUTPUT DEVICES:	Imagewriter 10 & 15, Apple Laserwriter, Pen Plotters,
OUTPUT SCALE:	0.5:1, 1:1, 2:1
FILE FORMAT (Optional):	Portable to mainframes.
PEN PLOTTERS SUPPORTED:	Houston DMP series, Hewlet Packard & compatibles, Roland DXY.
INPUT DEVICES SUPPORTED:	Mouse, Graphics Tablet, Keyboard
TITLE BLOCK:	Custom Title Block can be created.

Specifications subject to change without notice.

Ordering Information:

A single machine license for **McCAD Schematics** is available from **VAMP Inc.** The complete package includes a program disk, a Back-Up copy disk, and a users manual, all of which are packaged in a handsome book binder.

VAMP will pay the shipping for orders accompanied by a certified check, money order, or personal check to destinations within the USA. Allow three weeks for processing of personal checks. California residents must add 6% sales tax plus 1/2% Los Angeles county tax if applicable.

Purchase orders will be accepted from companies with approved credit.
Master Card and VISA card orders will be accepted upon verification.

For orders outside the USA we require that the order be prepaid by check or money order in U.S. dollars. If a charge card is used hard copy verification is required. Orders will be sent freight collect unless specified otherwise.

Send Orders for Part No. SCH-1 to:

VAMP Inc.
P.O. Box 411
Los Angeles, CA 90028
Phone: 213-466-5533

Telex: 650-262-3069; Answer Back: 650-262-3069-MCI

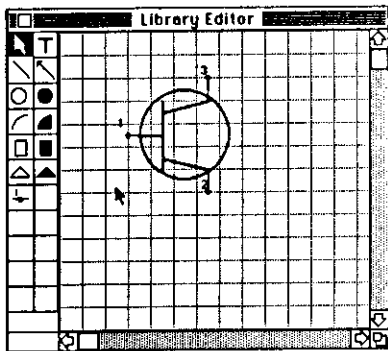
McCAD™ SCHEMATICS

A simple solution to a complex problem.

McCAD™ Schematics is a powerful CAD software tool that allows the electronic designer to easily create and revise electronic circuit designs (digital and/or analog) directly on the Macintosh computer. At the touch of a finger, the user can select the components he wishes to place on the 22" by 32" (D size) work surface and then perform a host of editing functions with ease.

User Expandable Libraries

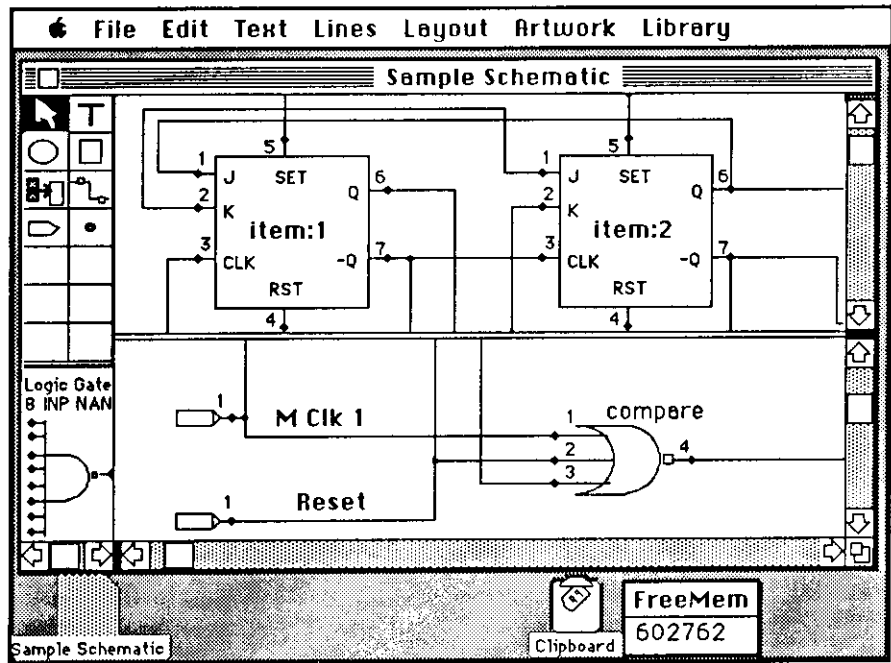
McCAD™ Schematics comes with a basic library of components which includes, among others: CMOS, TTL, CPU, Logic Gates, Flip Flops and Discrete Components. A Library Editor (Window) allows the user to create new components, build new libraries, revise, edit or expand existing libraries. Over 4 million files (limited only by available hardware) may be accessed.



Library Editor Access Window

Powerful Interconnect Router

Once components from the library have been placed on the work surface the system can automatically route the interconnect lines between the selected component pins. The system automatically keeps track of any nets created.



SCHEMATIC CAPTURE FOR THE MACINTOSH PERSONAL COMPUTER

Net List - Parts List

As the user creates his electronic circuit drawing, **McCAD™ Schematics** automatically keeps track of all components and node connections on the work surface. A Net List is compiled and anyone of five output formats is available, **McCAD™**, Gerber, Scicards, Computer Vision and Calay. The **McCAD™** Net List can thus be ported to a mainframe if desired. A Parts List and Wire List can also be output.

Full Rubber - Banding lines/objects/area drag

Interconnecting lines between components can be moved freely about without losing interconnections. If the user wishes to move a line, component, or an entire area to a new location on the work surface, the system will keep track of all points and automatically route the interconnects.

Full Text Capabilities

The system supports a variety of text fonts and sizes. Descriptive

notes can be typed on the work surface. Component, Node and Net labeling can be readily edited. User can control visibility and placement of individual node and net labels.

Multiple Windows / Split Screens

The system allows the user to work on several circuits at the same time. The work surface can be split vertically, horizontally or both at whatever increments the user desires. The designer can thus view critical portions of his design simultaneously and readily edit within them.

Outputs

Output drivers include Hewlett-Packard and Houston Instrument plotters, Laserwriter, Imagewriter and other output devices.

Technical Documentation

Text and/or circuit drawings cut to the Clipboard can be ported to other Macintosh applications such as MacPaint, McDraw, and Pagemaker.

THE COST EFFECTIVE SOLUTION

McCAD™ Schematics gives you performance at a price you can live with.

McCAD™ Software Price List

11/86

1. McCAD PCB Design Software Package.....	#PCB-1	\$395.00
Printed circuit design and artwork layout. Complete package includes Backup disk and Users Manual.		
2. McCAD PCB Design Evaluation Diskette.....	#PCB-EV1	\$ 15.00
3. McCAD PCB Design Users Manual.....	#PCB-M1	\$ 75.00
Loose leaf inserts only.		
<hr/>		
4. McCAD PCB To Gerber Translator.....	#PCB-GRB1	\$175.00
Translates McCAD data base into Gerber format file. Disk & Manual.		
5. McCAD Gerber View/Translator.....	#GRB-PCB-1	\$895.00
Translates Gerber Files into McCAD data base. Disk & Manual.		
<hr/>		
6. McCAD Schematics Software Package....	#SCH-1	\$495.00
Schematic Capture with User Definable Library. Creates Net & Parts Lists. Portable to mainframe. Includes Backup disk & Manual.		
7. McCAD Schematics Evaluation Diskette.....	#SCH-EV1	\$ 15.00
8. McCAD Schematics Users Manual.....	#SCH-M1	\$ 75.00
Loose leaf inserts only.		
<hr/>		
9. McCAD Metric/SMT/PCB Design.....	#SMT-1	\$595.00
Surface Mount, Hybrid, & Standard printed circuit design & layout		
10. McCAD SMT Evaluation Diskette.....	#SMT-EV1	\$ 15.00
<hr/>		
11. MGMS Mechanical Drafting Package.....	#MGMS-1	\$795.00

Software Support

With the purchase of each McCAD software package*, VAMP Inc. provides Software Support for a 30 day period from the date of purchase. In order to receive any support you must return the Acknowledgement & Registration Card.

Extended Support Available

Extended software support may be purchased from VAMP Inc. for an annual fee of \$95.00 per McCAD software package*. To obtain this support, fill in the Extended Support Card that comes with the users manual and return it with your payment. If you do not have an Extended Support Card call or write in for one. Extended Support subscribers will receive a special Support ID Number. Software Support consists of:

- 1) Phone Support
- 2) Software & Manual up-dates when necessary.

*McCAD PCB-GRB1 is excluded from software support. Special support can be obtained. Call in for details.

Ordering Information:

VAMP will pay the shipping for orders accompanied by a certified check, money order, or personal check to destinations within the USA. Allow three weeks for processing of personal check. California Residents must add 6% sales tax plus 1/2% Los Angeles County tax, if applicable. Purchase Orders will be accepted from companies with approved credit. Master Card and VISA orders accepted.

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VAMP Inc.

P.O. Box 411, Los Angeles, CA 90028, Phone: 213-466-5533

Telex: 650-262-3069 Answer Back: 650-262-3069-MCI

Number of Photo-plot/Fabrication Vendors Supporting McCAD™ Database Continues to Grow

Three new vendors are now supporting McCAD™ software for photo-plotting and/or fabrication:

Design Express, Inc. serves the Los Angeles Basin and the San Francisco Bay Area. Their phone numbers are (213) 681-0304 in Pasadena and (408) 988-2121 in Santa Clara.

LSJ Technology serves the Toronto area. Their phone number is (613) 592-3398 in Kanata,

Ontario, Canada.

Buffalo Circuits serves the upper New York state. Their phone number is (716) 662-2113 in Orchard Park.

A number of other vendors will be offering McCAD™ database services shortly. We will try to advise you as they come on line.

If you need the name of a McCAD™ vendor in your area, call Vamp, Inc. at (213) 466-5533.

Plot and Fabrication Services

Plot and fabrications services for printed circuit boards are available from Vamp, Inc. to McCAD™ users. For detail, contact John Soluk at (213) 466-5533.

BIG SCREEN COMPATIBILITY FOR McCAD™

For those who would like the advantage of viewing a larger work area at one time, McCAD™ software is compatible with most big screen displays for the Macintosh. Among those that are available are *The Big Picture™* (17" diagonal) from E-Machines, *Full Page Display™* (15" Diagonal) from Radius and *Megascree™* (19" diagonal) from MicroGraphic Images. McCAD™ software anticipates the release of other large screen systems in the near future. We have had the privilege of testing several different displays and were very impressed by the results, especially when working on very large printed circuit boards or schematics. Check with your local dealer or the manufacturer for price/feature comparisons.

McCAD™ IN COLOR!

Vamp, Inc., announced plans to release a color driver compatible with the VMI Color monitors. This will allow display of McCAD™ graphics in color. VMI makes "smart" color monitors in both 15" and 17" diagonal versions. Software release date has not been announced but is expected by 1st quarter of 1987.

HARD DISK McCAD™

A Hard Disk Install utility will soon be available for all McCAD™ software packages. This will allow the user to load copyprotected McCAD™ software to his hard disk. Hard disk loading will be limited to two installations. The original disk will still function as a "key master" disk.

OTHER COMING ATTRACTIONS:

McCAD™ Digital Circuit Simulator - 4th Quarter 1986
Delayed - Estimated 1st Quarter 1987

McCAD™ Autorouter - 3rd Quarter 1986
Delayed - Estimated 1st Quarter 1987

GOOD NEWS - SAVINGS EXTENDED

Save up to \$1200 on a Pen Plotter

VAMP, Inc., has extended their special offer on Houston Instruments Pen Plotters when purchased in conjunction with any McCAD™ software package.

	List	Special	SAVINGS
DMP-41/42	\$3295	\$2695	\$600
DMP-51/52	\$4695	\$3695	\$1000
DMP-51/52MP	\$5295	\$4195	\$1100
DMP56A	\$5995	\$4795	\$1200

Note: Pen Plotter orders must be prepaid or shipped COD. Add 6.5% sales tax if applicable. Shipping charges are additional. Call for details.

McCADen TIMES

December 1986

Volume 2/86

McCAD™ Schematics. A Good Thing Gets Even Better

If you think the original Schematics concept was great, wait till you see version 2.0. This is not just a minor refinement, but contains real added features, including *full rubber banding!* Not only can lines and objects be moved without losing interconnect between objects, a new feature called Area Select/Drag, allows you to move an

entire segment of your schematic. Among the other improvements are a library window, which shows a scaled picture of the currently selected library item., and object selection highlighting. McCAD™ Schematics Version 2.0 is still available at the affordable price of \$495. An evaluation disk is available for \$15.

PRINTED CIRCUIT DRAWING PACKAGES UPDATED

Both McCAD™ PCB and SMT/PCB printed circuit board drawing packages have been updated.

Both packages now feature faster repaint times and a custom template menu. The SMT/PCB version 2.0, now also features silklayer, padmaster, tracelayer and soldermask for *both* sides of the board when in the SMT mode (surface mount technology).

New Manuals Available For PCB and SMT/PCB Software

A brand new manual is now available for both printed circuit board drawing packages. The expanded and revised manuals contain numerous operational tips and helpful hints, much of it based on feedback from users. One manual is available at no cost to those on extended software support (*see preceding article*). The regular purchase price is \$75 per copy.

McCAD™ Extended Support is a Real Bargain

With all of the news in this issue about updated software, you may be thinking about buying the newer versions. You can take advantage of *all* future software revisions by purchasing Extended Software Support. For an annual fee of \$95 per software package (plus shipping and handling), this service provides the user with every software update and manual revision. Since the cost of updating software without the extended warranty coverage is half the retail price of a new package, this is a *real* bargain. If you've misplaced your green software support card, phone or write and we'll send you one. Remember, even if you don't opt for extended support, to send in your software registration card, as only registered users receive update information.

Vamp, Inc. Celebrates 10th Anniversary

It seems like only yesterday, but Vamp, Inc., has been serving the electronics industry for ten years.

McCAD™ Now Writes and Reads Gerber

McCAD™ to Gerber
Translator and McCAD™
Gerber View/Translator

With the release of these two new packages, it is now possible to output to a Gerber Photoplotter, *and* to read Gerber data files back into McCAD™ format.

McCAD™ to Gerber Translator has a complete set of utilities which streamline the process of preparing photoplot artwork. Users can select either Single Aperture or Multiple Aperture mode. Gerber data can be output directly via the printer port or saved to disk for later use.

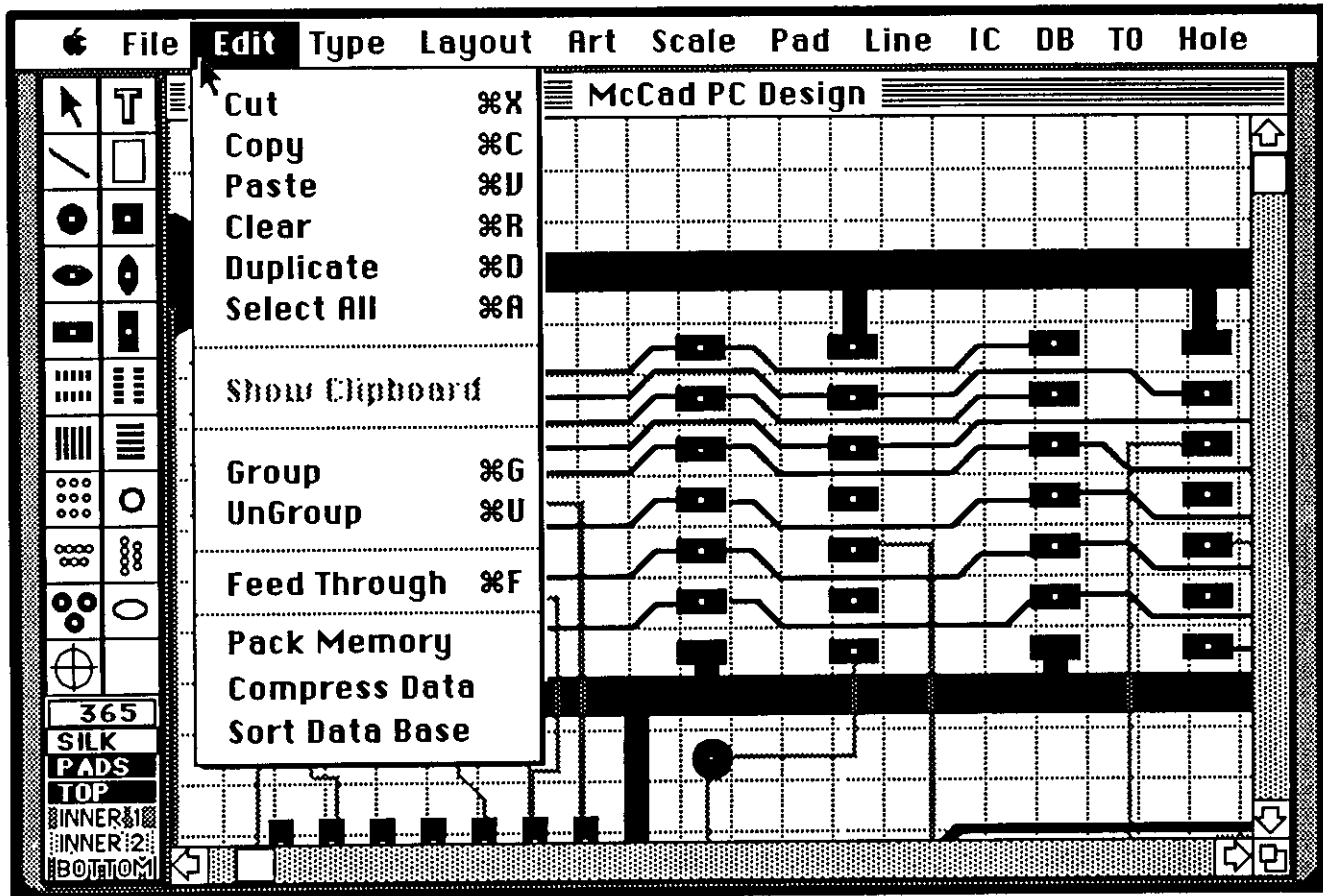
McCAD™ Gerber View/Translator offers the user tremendous flexibility in manipulating previously generated Gerber plot files - a common language bridge to output from other CAD systems. This new program also allows the user to view a plot file before outputting to the photoplotter.

MGMS - Technical Drafting Package

An excellent technical drafting package is now available through VAMP, Inc. The MGMS package includes many advanced features, such as design analysis, a scientific calculator, standard symbols library and automatic dimensioning. These are just a few of the many features of this excellent package. MGMS is available now for \$795.

We look forward to the next ten years of even bigger and better things to come.

McCAD™ PCB



Traditional Printed Circuit Board Design CAD

THE NEW GENERATION OF PCB DESIGN CAD

McCAD™ PCB (Printed Circuit Board) brings high performance CAD capability to the personal computer. **McCAD™ PCB** Software is a powerful, easy to use tool, for designing, creating, editing and revising printed circuit board artwork.

FAST AND EASY TO USE

Thanks to features such as: selectable-variable auto-grids, centered zoom, a precision x-y locator, multiple line generators, multiple pad generators, and selectable trace widths, editing and revisions are no longer a tedious chore. And of course, the easy to use Macintosh pull down menus, make the most complex task seem simple.

MINIMAL LEARNING CURVE

The **McCAD™ PCB** System is designed for ease of use and

requires a minimal learning curve. Average time required to become proficient is less than 20 minutes, with many users proficient in as little as 10 minutes.

MULTILAYER WORKSURFACE

Six data planes are supported on a 30" by 30" work surface, permitting large multiple layer board applications. The system generates a Silkscreen, Padmaster, Four Trace Layers, Drill Template, Drill Listing and a Composite Checkprint. The user has the option of viewing any individual layer or combination of layers, in simultaneous registration.

EXTENSIVE ARTWORK LIBRARY

The system includes a library of *over 1800 standard art elements*, including all standard I.C. patterns, D.B. connectors, and T.O. connectors. The designer can select pad size, pad style, drill size and spacing.

BUILT-IN CONVENIENCE AND COMPATIBILITY

Features such as: Text labeling, 20% to 1000% zooming, data compression and data sort are just some of the built-in utilities. Since **McCAD™** software is compatible with large screen displays and memory expansion modules, even high density and large printed circuit boards are no problem.

BUILT-IN OUTPUT DRIVERS

Output drivers include, Hewlett-Packard and Houston Instrument plotters, Laserwriter, Imagewriter and a wide variety of other devices. User defineable output parameters include: selectable pen size, selectable pen speed, selectable baud rate, selectable output ports. Drawings can be positioned on the output medium. The database, accurate to 0.001 inch, can also be plotted via optional software on Gerber-type photoplotters.

THE COST EFFECTIVE TOTAL SOLUTION

McCAD™ PCB is part of a family of integrated electronics design software which aids the engineer from concept to production. The electronics designer's productivity can be increased from the comfort of his own desk--without a major capital investment.

SPECIFICATIONS:

SYSTEM CONSOLE:	Macintosh 512K, Mac Plus, 1 or 2 Meg Upgrades.
LAYOUT AREA:	30" x 30"
NUMBER OF LAYERS:	6 - viewable in simultaneous registration
LAYER VIEWING:	All or selected combinations
NUMBER OF COLORS ON SCREEN:	3 - Black, white, halftone patterns (3)
DISPLAY SCREEN RESOLUTION:	512 x 342 (Mac)
DISPLAY SCALING (ZOOM)	20% to 1000%
NUMBER OF PAD SIZES:	18 of each shape
PAD SHAPES:	Square, round, rectangular (2), oval (2)
DUAL IN-LINE PATTERNS:	8, 10, 14, 16, 20, 22, 24, 28, 36, 40 pin or any resulting combination. Choice of .3, .4, .6, .9 spacing. Choice of pad shape.
DB CONNECTORS:	9, 15, 25, 37, pin patterns
TO PATTERNS:	3, 4, 6, 8, 10, 12, pin patterns
PATTERN ARRAY GENERATORS:	For multiple pad array, multiple line array, or ground plane creation
NUMBER OF TRACE SIZES:	18, plus any resulting combination
NUMBER OF DRILLING SIZES:	17 - From 0.028 to 0.5 inches
SILKSCREEN:	Rectangular & Circular pattern generator. Choice of Text fonts and sizes
CUSTOM TEMPLATE LIBRARY	Stores user created artwork masters
DATABASE RESOLUTION:	.001 inches
BUILT-IN GRIDS:	.020, .025, .050, .1, .125, .150, .156, & .200 inches.
AUTO-GRID:	Placement of art to nearest grid line
ART PLACEMENT INTERVAL:	.001 inches (Auto-Grid off)
TRACKING RULER:	Division set by grid spacing
LOCATOR:	True data position in thousandths
OUTPUT DOCUMENTS:	Trace layers (4), Silk screen, Pad Master, Solder Mask, Drill Template, Drill List, Checkprints
OUTPUT INTERFACE:	Serial EIA RS-232C
OUTPUT DEVICES:	Imagewriter, Apple Laserwriter, Pen Plotter, Gerber type Photoplotter (Optional)
OUTPUT SCALE:	1:1, 2:1, 3:1, 4:1 (Imagewriter requires photo reduction)
PEN PLOTTERS SUPPORTED:	Houston DMP (40, 41/42, 51/52, 56), Hewlett Packard (7470, 7475A, 7550, 7580, 7585, 7586) & compatibles
INPUT DEVICES SUPPORTED:	Mouse, Graphics tablet, Keyboard

Specifications subject to change without notice.

Ordering Information:

A single machine license for McCAD PCB is available from VAMP Inc. The complete package includes a Program disk, a Back-Up copy disk, and a users manual, all of which are packaged in a handsome book binder.

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